

<b>Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/993,493	CHAFFEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer N. To	2195	

All participants (applicant, applicant's representative, PTO personnel):

(1) Jennifer N. To. (3) \_\_\_\_\_.

(2) Richard Eby. (4) \_\_\_\_\_.

Date of Interview: 11 May 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 1, 7, 18, 19, 26-28, 33 and 35.

Identification of prior art discussed: \_\_\_\_\_.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant agreed to amend the claims accordance to examiner amendment by faxing the amendment to examiner. <sup>in</sup>

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.



Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

BRUCE TITTEL  
DAVID S. STALLARD  
J. ROBERT CHAMBERS  
GREGORY J. LUNN  
KURT L. GROSSMAN  
CLEMENT H. LUKEN, JR.  
THOMAS J. BURGER  
GREGORY F. AHRENS  
WAYNE L. JACOBS  
KURT A. SUMME  
KEVIN G. ROONEY  
KEITH R. HAUPT  
THEODORE R. REMAKLUS  
THOMAS W. HUMPHREY  
SCOTT A. STINEBRUNER  
DAVID H. BRINKMAN  
BEVERLY A. LYMAN, Ph.D.  
KRISTI L. DAVIDSON  
KATHRYN E. SMITH  
P. ANDREW BLATT, Ph.D.  
DAVID E. JEFFERIES

**WOOD, HERRON & EVANS, P.L.L.**  
2700 Carew Tower  
Cincinnati, Ohio 45202-2917  
(513) 241-2324

**FAX: (513) 241-6234**

E-Mail Address: [whepatent@aol.com](mailto:whepatent@aol.com)

**PATENT, TRADEMARK, COPYRIGHT  
AND UNFAIR COMPETITION LAW  
AND RELATED LITIGATION**

EDMUND P. WOOD 1923-1968  
TRUMAN A. HERRON 1935-1976  
EDWARD B. EVANS 1936-1971

JOSEPH R. JORDAN  
C. RICHARD EBY

WILLIAM R. ALLEN, PhD.  
JOHN PAUL DAVIS  
DOUGLAS A. SCHOLER  
BRETT A. SCHATZ  
DAVID W. DORTON  
SARAH O. GRABER  
STEVEN W. BENINTENDI, Ph.D.  
RANDALL S. JACKSON, JR.

TECHNICAL ADVISOR  
HENRY M. LABODA, PhD.

OF COUNSEL  
JOHN D. POFFENBERGER  
THOMAS W. FLYNN  
J. DWIGHT POFFENBERGER, JR.  
DAVID J. JOSEPHIC  
DONALD F. FREI

## **FACSIMILE COVER SHEET**

May 12, 2006

Serial No.: 09/993,493  
Filed: November 27, 2001  
Group Art Unit: 2195  
Examiner: Jenifer To  
Applicant: Michael C. Chaffee et al.  
Title: SYSTEM CONTROLLING EXCLUSIVE ACCESS BY CONTROL  
PROGRAMS TO SYSTEM RESOURCES  
Atty Docket No.: KUKD-02

**Fax No: 571-273-7212**  
**FROM: Richard Eby**

**TOTAL PAGES: 13 (including cover sheet)**

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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Serial No.: 09/993,493  
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Group Art Unit: 2195  
Examiner: Jennifer To  
Applicant: Michael C. Chaffee et al.  
Title: SYSTEM CONTROLLING EXCLUSIVE ACCESS BY CONTROL  
PROGRAMS TO SYSTEM RESOURCES  
Atty Docket No.: KUKD-02

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**AUTHORIZATION FOR EXAMINER'S AMENDMENT**

Pursuant to a telephone interviews with the Examiner on May 1, 10 and 11 2006,  
Applicants request the Examiner amend the above-identified application as follows:

**Amendments to the Claims** are reflected in the listing of claims, which begins  
on page 2 of this Amendment.

**Remarks** begin on page 14 of this Amendment.

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**Listing of Claims**

1. (currently amended) A system for controlling use of at least one resource, wherein the at least one resource is one of a physical workspace that is in part shared by at least two machines, control of an industrial process and a data object, the system comprising:

a plurality of addressable locations in the system;

a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

controllers operably connected to respective ones of a plurality of machines or processes, the controllers being located with at least one of the addressable locations;

a plurality of control programs operable at different addressable locations to request use of the at least one resource, at least one of the control programs operable to command one of the controllers; and

a plurality of resource managers being located at different ones of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, and the plurality of resource managers working together over the communication system to arbitrate which one control program of the plurality of control programs is given exclusive use of the at least one resource during execution of the one control program, the one control program being given use of the at least one resource by a local resource manager at the same addressable location as the one control program.

Cancel claim 2.

3. (currently amended) A system in accordance with claim 1 **[[2]]** wherein:  
the physical workspace is defined logically.

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4. (original) A system in accordance with claim 1 wherein:  
the at least one resource is control of an input/output function shared between the machines.
5. (original) A system in accordance with claim 1 wherein:  
the at least one resource effects transport of items processed by the machines.
6. (original) A system in accordance with claim 1 wherein:  
the at least one resource is control of exchange of tools used by the machines.
7. (original) A system in accordance with claim 1 wherein:  
the at least one resource is control of processing performed at processing stations in a manufacturing process.
8. (original) A system in accordance with claim 1 wherein:  
the at least one resource is control of a sensor system.
9. (original) A system in accordance with claim 1 wherein:  
the control program is executed by a computer located at an addressable location in the system.

Cancel claims 10-18.

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19. (currently amended) A system for controlling use of at least one resource, wherein the at least one resource is one of a physical workspace that is in part shared by at least two machines, control of an industrial process and a data object, the system comprising:

a plurality of addressable locations in the system;

a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

controllers operably connected to respective ones of a plurality of machines or processes, the controllers being located with at least one of the addressable locations;

a plurality of control programs operable at different addressable locations to request use of the at least one resource, at least one of the control programs operable to command one of the controllers; and

a plurality of resource managers being located at different ones of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, and the plurality of resource managers working together over the communication system to arbitrate which one control program of the plurality of control programs is given exclusive use of the at least one resource during execution of the one control program, the one control program being given use of the at least one resource by a resource manager at a different addressable location as the one control program ~~A system in accordance with claim 1 wherein: the control program uses a resource that is controlled remotely by a resource manager at an addressable location different from the control program.~~

Cancel claim 20.

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21. (original) A system in accordance with claim 1 comprising:

a human machine interface, coupled to at least one resource manager, which provides a point of access to the at least one resource manager, to permit establishing of the resources under control of the at least one resource manager, to observe the state of the resources under the control of the at least one resource manager and to modify the state of the resources under the control of the at least one resource manager.

22. (original) A system in accordance with claim 21 wherein:

the human machine interface is local to at least one of the resource managers.

23. (original) A system in accordance with claim 21 wherein:

the human machine interface has access to at least one resource manager through at least one other resource manager.

24. (original) a system in accordance with claim 21 wherein:

the human machine interface is remote from the at least one of the machines controlled by the at least one resource manager.

Cancel claim 25.

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26. (currently amended) ~~A system in accordance with claim 1 comprising:~~ A system for controlling use of at least one resource, wherein the at least one resource is one of a physical workspace that is in part shared by at least two machines, control of an industrial process and a data object, the system comprising:

a plurality of addressable locations in the system;

a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

controllers operably connected to respective ones of a plurality of machines or processes, the controllers being located with at least one of the addressable locations;

a plurality of control programs operable at different addressable locations to request use of the at least one resource, at least one of the control programs operable to command one of the controllers;

a plurality of resource managers being located at different ones of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, and the plurality of resource managers working together over the communication system to arbitrate which one control program of the plurality of control programs is given exclusive use of the at least one resource during execution of the one control program;

each resource manager arbitrates access to a plurality of resources with access to the plurality of resources being in a set order;

each resource manager tracks each control program requesting control of the resources and in what order; and

if a control program requests access to at least two resources out of the set order, a warning is issued that a deadlock between the control program requesting access to the at least two resources and another control program is possible.



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27. (currently amended) ~~A system in accordance with claim 1 wherein:~~ A system for controlling use of at least one resource, wherein the at least one resource is one of a physical workspace that is in part shared by at least two machines, a control of an industrial process and a data object, or the system comprising:

a plurality of addressable locations in the system;

a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

controllers operably connected to respective ones of a plurality of machines or processes, the controllers being located with at least one of the addressable locations;

a plurality of control programs operable at different addressable locations to request use of the at least one resource, at least one of the control programs operable to command one of the controllers; and

a plurality of resource managers being located at different ones of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, and the plurality of resource managers working together over the communication system to arbitrate which one control program of the plurality of control programs is given exclusive use of the at least one resource during execution of the one control program, the plurality of resource managers collaborate to determine if a set of machine control programs requesting access to a set of resources is found to form a deadlock and then the deadlock state is communicated to the user.

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28. (currently amended) ~~A system in accordance with claim 1 wherein: the~~ A system for controlling use of at least one resource, wherein the at least one resource is one of a physical workspace that is in part shared by at least two machines, a control of an industrial process and a data object, the system comprising:

a plurality of addressable locations in the system;

a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

controllers operably connected to respective ones of a plurality of machines are robots which use a plurality of workspaces which at least in part are located within a mutual workspace, the controllers being located with at least one of the addressable locations;

a plurality of control programs operable at different addressable locations to request use of the at least one resource, at least one of the control programs operable to command one of the controllers; and

a plurality of resource managers being located at different ones of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, and the plurality of resource managers working together over the communication system to arbitrate which one control program of the plurality of control programs is given exclusive use of the at least one resource during execution of the one control program.

29. (original) A system in accordance with claim 1 wherein:

the control program includes user programmable instructions to the plurality of resource managers to control the state of the at least one resource.

Cancel claims 30-32.

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33. (currently amended) A system for controlling use of at least one resource, wherein the at least one resource is one of a physical workspace that is in part shared by at least two machines, control of an industrial process and a data object, the system comprising:

- a plurality of addressable locations in the system;

- a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

- controllers operatively connected to respective ones of a plurality of machines or processes, the controllers being located with at least one of the addressable locations;

- a group of control programs operable at different addressable locations to request use of the at least one resource and at least one of the control programs operable to command one of the controllers; and

- a plurality of resource managers being located at different ones of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, such that the resource managers implement at least one interlock on behalf of the at least one resource, each interlock providing mutually exclusive use of the at least one resource by one of the control programs, each interlock being controlled by programmable instructions from within the one of the control programs.

34. (original) A system in accordance with claim 33 wherein:

- the instructions are user instructions.

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35. (currently amended) A system for controlling use of a shared workspace comprising:

addressable locations in the system;

a communication system connecting the addressable locations and transmitting communications between the addressable locations, the communication system having no inherent capability to provide mutually exclusive use of the at least one resource;

at least two machines and associated controllers located with at least one of the addressable locations, the at least two machines sharing the workspace;

control programs operable at different addressable locations to request use of the shared workspace and at least one of the control programs operable to command one of the controllers; and

resource managers located with different ones of the plurality of the addressable locations, each resource manager communicating over the communication system with at least one other resource manager, and the resource managers working together over the communication system to arbitrate which one control program is given exclusive use of the shared workspace during execution of the one control program, the one control program being given use of the at least one resource by a resource manager at one of a common and a different addressable location as the one control program.

36 (previously presented) The system of claim 1 wherein the communication system is not connected to the at least one shared resource.

37. (new) A resource management system in accordance with claim 19 wherein the at least one resource further comprises one of control of an input/output function shared between the machines, control of transport of items processed by the machines, control of an exchange of tools used by the machines, control of processing performed at processing stations in a manufacturing process and control of a sensor system.

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38. (new) A resource management system in accordance with claim 26 wherein the at least one resource further comprises one of control of an input/output function shared between the machines, control of transport of items processed by the machines, control of an exchange of tools used by the machines, control of processing performed at processing stations in a manufacturing process and control of a sensor system.

39. (new) A resource management system in accordance with claim 27 wherein the at least one resource further comprises one of control of an input/output function shared between the machines, control of transport of items processed by the machines, control of an exchange of tools used by the machines, control of processing performed at processing stations in a manufacturing process and control of a sensor system.

40. (new) A resource management system in accordance with claim 28 wherein the at least one resource further comprises one of control of an input/output function shared between the machines, control of transport of items processed by the machines, control of an exchange of tools used by the machines, control of processing performed at processing stations in a manufacturing process and control of a sensor system.

41. (new) A system in accordance with claim 19 comprising:

a human machine interface, coupled to at least one resource manager, which provides a point of access to the at least one resource manager, to permit establishing of the resources under control of the at least one resource manager, to observe the state of the resources under the control of the at least one resource manager and to modify the state of the resources under the control of the at least one resource manager.

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42. (new) A system in accordance with claim 41 wherein the human machine interface is local to at least one of the resource managers, has access to at least one resource manager through at least one other resource manager, is remote from the at least one of the machines controlled by the at least one resource manager, or a combination thereof.

43. (new) A system in accordance with claim 26 comprising:

a human machine interface, coupled to at least one resource manager, which provides a point of access to the at least one resource manager, to permit establishing of the resources under control of the at least one resource manager, to observe the state of the resources under the control of the at least one resource manager and to modify the state of the resources under the control of the at least one resource manager.

44. (new) A system in accordance with claim 43 wherein the human machine interface is local to at least one of the resource managers, has access to at least one resource manager through at least one other resource manager, is remote from the at least one of the machines controlled by the at least one resource manager, or a combination thereof.

45. (new) A system in accordance with claim 27 comprising:

a human machine interface, coupled to at least one resource manager, which provides a point of access to the at least one resource manager, to permit establishing of the resources under control of the at least one resource manager, to observe the state of the resources under the control of the at least one resource manager and to modify the state of the resources under the control of the at least one resource manager.

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46. (new) A system in accordance with claim 45 wherein the human machine interface is local to at least one of the resource managers, has access to at least one resource manager through at least one other resource manager, is remote from the at least one of the machines controlled by the at least one resource manager, or a combination thereof.

47. (new) A system in accordance with claim 28 comprising:

a human machine interface, coupled to at least one resource manager, which provides a point of access to the at least one resource manager, to permit establishing of the resources under control of the at least one resource manager, to observe the state of the resources under the control of the at least one resource manager and to modify the state of the resources under the control of the at least one resource manager.

48. (new) A system in accordance with claim 47 wherein the human machine interface is local to at least one of the resource managers, has access to at least one resource manager through at least one other resource manager, is remote from the at least one of the machines controlled by the at least one resource manager, or a combination thereof.

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**Remarks**

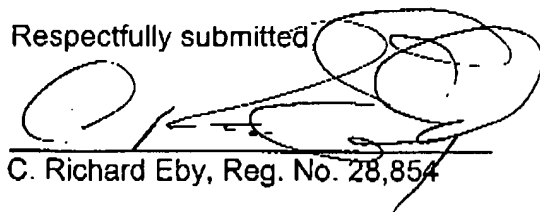
Claims 2, 10-18, 20, 25 and 30-32 have been canceled, and claims 1, 3, 19, 26-28, 33 and 35 have been amended. New claims 37-48 have been added. Claims 1, 3-9, 19, 21-24, 26-29, 33-36 and 37-48 remain in the application.

Applicants appreciate the opportunity to conduct telephone interviews with the Examiner on May 1, May 8 and May 11, 2006 during which the prior art and various amendments to the claims were discussed. Applicants hereby authorize an Examiner's amendment as set forth herein.

Applicants submit herewith a fee of \$800 for four added independent claims. Applicants do not believe that any additional fees are due in connection with this submission. However, if such extension is due or any other fees are necessary, the Commissioner may consider this to be a request for such and charge any necessary fees to deposit account 23-3000.

Applicants respectfully submit that the application is now in condition for allowance and reconsideration of the application is respectfully requested. The Examiner is invited to contact the undersigned in order to resolve any outstanding issues and expedite the allowance of this application.

Respectfully submitted



C. Richard Eby, Reg. No. 28,854

WOOD, HERRON & EVANS, L.L.P.  
2700 Carew Tower  
Cincinnati, Ohio 45202  
PH: (513) 241-2324, Ext. 292  
FX: (513) 241-6234